

CAUSE SPECIFIC MORTALITY IN A COHORT OF PEOPLE LIVING CLOSE TO SIX MUNICIPAL SOLID WASTE LANDFILLS

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Background and Aims: the risk perception at population level of possible adverse health effects of waste treatment and landfilling is strong, especially in Italy, although the scientific evidence is still limited. We evaluated whether living close to a landfill is associated with an increased risk of cause specific mortality in Lazio, Italy.

Methods: we defined a cohort of residents within 5 km from six landfills during the period 1996-2008. Follow-up for vital status was done with the municipality of residence and mortality data were retrieved from a regional data base. Each participant's address was geocoded and assigned to a distance from each landfill on the basis of a GIS. Cause-specific mortality relative risks (RR, CI 95%), adjusted for age and socioeconomic status (area-based index) were calculated in 3 bands of increasing radius from landfills: 0-2, 2-3, and 3-5 Km (reference group), using a Poisson regression model.

Results: the cohort consisted of 197,285 people, 2.7% of whom lived close (0-2 km) to the landfills; 43.6% of the residents at 0-2 km was of low socioeconomic status versus 28.2% observed in the reference group. No excess risk in mortality was observed when comparing people residents at 0-2 km with the reference group (3-5 km) (RR 1.03 CI 95% 0.93-1.14 men; RR 1.03, CI 95% 0.92-1.16 women). No distance related gradient was observed for cancer mortality (RR 0.92, CI 95% 0.77-1.10 and RR 0.95, CI 95% 0.76-1.20, men and women, respectively) or for several other causes analyzed.

Conclusions: subjects living close to landfills tend to be of lower socioeconomic status. In agreement with the available literature, our results indicate that after adjusting for socioeconomic status, there is no association between residence in areas with landfills and mortality.